I. GENERAL

A. Project Overview

First Submittal

___Proposed improvements and project limits are consistent with the scope and type of work

___Other projects in the same area have been noted

___Adjacent plats reviewed for subdivision regulations and commitments

Second Submittal

___Design exceptions requested and approved

PS&E Submittal

___Checked for multi-year contract and appropriate fact sheets created

B. Special Provisions

Draft PS & E Submittal

___Special provisions written for items not covered by the City of Lincoln Standard Specifications for Municipal Construction, any supplemental specifications, or previously approved special provisions.

___ Special events during construction noted

___ Status of Adjacent Projects analyzed

___ Status of Utilities noted

___ Status of ROW noted

___ Status of Railroad noted

___ City supplied traffic items listed

C. Special Plans

First Submittal

___Cost/Benefit Analysis to determine if guardrail needed

___Fence replacement with project? By contractor or property owner?

Second Submittal

___ Special Plans drafted

___Lincoln Standard Plans reviewed

___Lincoln Specifications reviewed

___ Lincoln Design Standards reviewed

D. PS & E

PS & E Submittal

___PS&E forms completed

___Verify all bid item #'s are referenced in Appia software

___Bid Form matches Summary of Quantities sheet

E. Permits / Agreements

Periodically throughout design, Project Managers should be looking at agreements that were in place prior to the beginning of the project to verify correct information

First Submittal

___"Project Permit Checklist" completed
___Begin coordination with the Railroad

Draft PS&E

___Permit applications have been submitted (update the city's project database to include submittal date)
___Check for agreements with other local government agencies

PS&E Submittal

___ Permits obtained (update city's project database to include the permit approval date)

F. Geotechnical

Second Submittal

___Geotechnical Report reviewed to assure conformity with plans and specifications
___Unsuitable material identified
___Settlement time determined
___Compaction requirements determined
___Groundwater concerns identified

G. Cost Estimates

Level of Cost Estimating detail appropriate for project submittal
Cost Estimates shall be the total cost of the project. Items shall include, but not be limited to: utilities (private and public), right-of-way, construction, preliminary engineering, railroad, and construction engineering

First Submittal

___Major cost changes have been noted

Second Submittal

___Group Pay Items by discipline

a. Paving
b. Storm Sewer
c. Sanitary Sewer
d. Water Main
e. Erosion Control
f. Pavement Markings
g. Signing
h. Lighting and Traffic Signals
i. Miscellaneous
j. Bridge
k. Landscaping

___Estimates and Appia broken out into separate City funding sources (i.e. Water

Department Funding)
___Check that pay items in cost estimate match “Pay Items List”
___Estimates checked against Summary of Quantities Sheet.
___Submit cost estimates at each submittal or as directed by the Project Manager

II. ROADWAY

A. Typical Section

First Submittal

Items identified are:
___Pavement type
___Pavement depth
___Pavement cross-slope
___Over excavation
___Subgrade
___Lane width
___Shoulder width / type
___Curb type
___Sidewalk width
___Median surfacing & width

B. Geometrics

First Submittal
___Alignment of lanes checked
___Length of Turn Lanes conforms to C.O.L. standards
___Bus turnouts analyzed
___Geometrics designed for U-turns where applicable
___Taper lengths in accordance with City of Lincoln Standards
___Location of turn lanes identified
___ Check Geometrics using “Auto Turn” software

C. Horizontal Alignment

First Submittal
___Superelevation Method Noted
___Alignment checked by hand to determine if data is correct and not affected by rounding errors created in GEOPAK
___Curve Radii conform to C.O.L. Standards

D. Vertical Alignment

First Submittal
___Length of curve rounded to nearest 10’ increment (20’ preferable)
___”K” Value meets more conservative of C.O.L. design standards or AASHTO Green Book
___High point / low point location adjusted to minimize drainage concerns
___Verify no low points in intersections

___Intersection and driveway sight distance calculations submitted
___Minimum and maximum allowable grades checked for all locations (including 3% platform at all intersections that could potentially be signalized)

E. Intersections / Driveways

First Submittal
___ Surfacing material for driveways and intersections identified
___Access Control analyzed

Second Submittal
___Angle of intersection in conformance to C.O.L. Design Standards
___Appropriate curb return radii & tapers meet C.O.L. Standards
___Proposed entrances and exits align with other proposed or existing entrances and exits
___Proposed entrances and exits located to provide maximum separation from other drive approaches and intersections
___Left-turn lanes are offset for sight distance
___Intersection and driveway sight distance calculations submitted
___Locations of obstacles / hazards identified, including objects in sight distance triangle
___Driveway slope in conformance with C.O.L. Standards
___Driveway profile meets ADA regulations across sidewalk
___Adjacent sidewalks adjusted to proposed intersection / driveway elevation and meet ADA Guidelines

F. Earthwork

First Submittal
___Over excavation requirements analyzed

Second Submittal
___Earthwork quantities calculated
___Additional top soil requirements analyzed
___Compost requirements analyzed (if required then coordinate with City Landfill)

G. Cross Sections

Second Submittal
___Tie-in locations meet existing ground
___Positive Drainage achieved at tie-ins
___Retaining walls shown at correct locations
___Meet C.O.L. Standard tie-slopes

H. Cul-De-Sacs / Dead Ends

First Submittal
___Maximum length requirements are not exceeded

Second Submittal
___Conformity to Design Standards and LSP 662
___Turn around provisions met (LSP 620)
___Proper barricades and markers specified (LSP 164)

I. Construction / Removal

Second Submittal
___Salvaged materials identified (pipes, poles, fire hydrants, etc.)
___Pavement Removal for Utility Construction Included
___Pavement Replacement for Utility Construction Included
___Coordination completed with Rehab for pavement resurfacing
___Check trench depths in relation to construction limits
___Check limits of excavation for retaining walls in relation to construction limits

J. Joints / Grades

Second Submittal
___Grades Reflect proposed drainage patterns
___Check Turn lane taper elevation at curb line for positive drainage

K. Sidewalk & Trail Issues (maintain pedestrian access)

First Submittal
___Check Current Comp Plan for future bike trail locations
___Sidewalk width – 5 feet along arterials; Passing opportunities provided elsewhere
___Pedestrian connections have been identified

Second Submittal
___Temporary construction phase issues identified and addressed
___All sidewalk ramps in project limits meet ADA requirements
___Pedestrian write up for the sidewalk and trail committee is completed

III. TRAFFIC

A. Data

First Submittal
___Traffic data, projections, and vehicle turn movements (including u-turns) have been obtained and addressed
___Design is appropriate for ADT

B. Traffic Analysis

First Submittal
___Intersection Capacity Analysis completed
___All appropriate warrants analyzed (i.e. Signal, Turn-lane, Etc.)

C. Signals

Second Submittal
___Signalization times are included
___Traffic Engineering contacted
___Identify city supplied items

Draft PS&E
___Order city supplied items

D. Markings

Second Submittal
___Pavement markings conform to MUTCD Standards and LSP 79
___Parking issues that affect markings have been identified and addressed
___Crosswalk locations identified and any issues addressed
___Pavement markings consistent with existing markings on project ends
___Stop bar locations identified for bus / truck turning movements
___ Include strip map

E. Signing

Second Submittal
___Signing items are included
___Sign sleeves are included

F. Lighting

Second Submittal
___Lighting items are included
___Coordination complete with Lincoln Electric System

IV. TRAFFIC CONTROL

A. Construction Phasing

First Submittal
___ Include strip map
___General description of phasing and Initial Detour Route discussed with Construction Engineer and Traffic Ops
Second Submittal
___Provide and maintain access during construction
___Roadway and pedestrian traffic handling considerations are listed on the plans and if appropriate noted in Special Provisions
_____Businesses
_____Local traffic
_____School busses
_____Emergency vehicles
_____Postal delivery

___Peak hour lane closures and weekend closures have been addressed
___Temporary pavement markings have been addressed

B. Detours

Second Submittal
___Detour routes
_____Necessary improvements needed for intersections on detour route identified
_____Coordination done with other projects in the area
_____NDOR and/or County to review detour routes if route is on their system
_____Structures along detour route checked for Vertical and Horizontal clearances

C. Traffic Controls

Second Submittal
___Minimum MUTCD requirements and City of Lincoln Traffic Control Guidelines for Street Construction, Maintenance and Utility Operations have been reviewed
___Posted speed during construction

V. STORMWATER

Second Submittal

Pipe Systems:
___Storm Water drainage system provides required capacity and meets C.O.L. design Standards
___Drainage Study Data reviewed
_____Drainage area
_____Storm Frequencies used
_____Discharges determined (including pre and post development if applicable)
_____Check that necessary water surface elevations will not be increased
___Hydrologic and Hydraulic Computation requirements:
_____Appropriate rational method coefficients used
_____Overland flow computations completed
_____Street carrying capacity completed
_____Inlet computations completed
_____Placement of inlets appropriate both horizontally and vertically so that they collect drainage, are not on the high side of curves, appropriate number of inlets, canted or straight, etc.
_____Pipe size computations completed
_____Open channel computations completed
_____Outlet computations completed including appropriate erosion control
_____Analysis of downstream impacts below the outlet of the system

___Storm Water drainage profile requirements:
_____Minimum and maximum slope requirements satisfied
_____Minimum cover requirements satisfied
_____Minimum separation between storm sewer and other utilities satisfied
_____Any needed water looping accounted for in design and cost estimate

_____Hydraulic grade line checked
_____Profiles for trunk lines and lateral lines shown

___Storm water drainage system coordinates with area Subdivision Studies.
___Pipe taps into pipes > 30" if adjoining pipe is < 0.5 x pipe diameter checked
___Account for sewer and water service lines(s) conflicts in design and estimate
___Special ditches designed if necessary
___Special structures or headwalls designed if necessary (check maximum depth of inlets and manholes)
___Grate on flared end section (inlet side only)

Bridges and Culverts:
___Storm Water drainage system provides required capacity and meets C.O.L. design Standards
___Drainage Study Data reviewed
_____Drainage area
_____Storm Frequencies used
_____Discharges determined (including pre and post development if applicable)
_____Check that necessary water surface elevations will not be increased
___Hydrologic and Hydraulic Computation requirements:
_____Appropriate SCS curve numbers used
_____Appropriate Time of Concentration used
_____Flow acquired from a Watershed Master Plan
_____HEC-RAS or HY8 model
_____Appropriate roadway overtopping used
_____Analysis of downstream impacts below the outlet of the system
___Special structures or headwalls designed if necessary

VI. SANITARY SEWER

First Submittal
___Existing service lines researched – location available from TV Logs
___Meeting with Wastewater to discuss possible system improvements, capacity, by-pass pumping plan, etc.

Second Submittal
___Sanitary sewer sized appropriately (minimum size = 8") and designed to meet C.O.L. Standards
___Hydraulic grade line checked
___Manhole locations at intersections of sanitary sewer pipes, change in pipe diameter, when there is a significant change in slop or direction, and at maximum spacing of 600 feet
___Flow line elevation difference between manhole inlet(s) and outlet checked
___Drop manhole(s) used when invert elevation differences are greater than 2.5 feet
___Services shown to each platted lot (table of information)
_____Location of wye on sanitary sewer checked
_____Flow line of main sewer at wye checked
_____Flow line of service at wye checked (1 foot above flow line of main sewer)
_____Flow line of service at lot line checked
_____Length of service checked
_____Location of service at lot line shown (dimension from lot line if not centered in lot)

___Sanitary Sewer Profile requirements:
_____Minimum slopes and maximum slopes requirements checked
_____Minimum cover requirements; (maximum depth = 15 feet)
_____Minimum separation between sewer line and other utilities

VII. WATER MAIN – **PENDING, NOT READY FOR WEB**

First Submittal
___Valve locations and spacing meet Water Department Guidelines and Design Standards
___Check that Multi-lane roadways have hydrants on both sides
___Service lines researched

Second Submittal
___Hydrant locations and spacing (maximum 420 feet)
_____Have been reviewed by the Water Department
_____Have been reviewed by the Fire Department
___Water line profile shown
___Only one extension per hydrant
___Maximum change in grade without bend checked
___Minimum cover requirements checked (5 feet)
___Minimum separation between water line and other utilities checked
___Check curb line elevation and hydrant length shown (5.5 feet or 6.5 feet from flange to elbow)
___Check that hydrant locations are not in conflict with existing sidewalks, future sidewalks, or other structures
___All conflicting utilities have been studied and resolution documented

VIII. EROSION CONTROL

Second Submittal
___Appropriate erosion control design requirements:
_____Rip Rap
_____Seeding (temporary and permanent)
_____Erosion control mat
_____Channel bank stabilization material
_____Silt fence
_____Mulching
_____Inlet protection
_____Construction entrance
_____Other

IX. RIGHT-OF-WAY

First Submittal
___Retaining wall locations identified (city property or private property)

Second Submittal

___Right-of-Way, Temporary Easements and Permanent Easements acquired and recorded

_____Easements must be shown around sump inlets ponding on private property and sump inlet ponding calculations must be provided

_____Easements must be provided around open drainage ways and computations supporting the drainage way must be provided

X. LANDSCAPING

Second Submittal

___Coordination with Parks and Recreation Department and Water Department

___Irrigation systems addressed

XI. BRIDGES

First Submittal

___Structures checked for vertical and horizontal clearance

___Coordination with private and public Utilities to determine if utilities, including lighting, will be on bridge

___Check to see if pedestrian or bike trail needs to be incorporated into bridge design

___MSE walls or fill slope comparison completed

___Type, size and location (TS&L)

Second Submittal

___Guardrail designed

___Approach slab designed

___Hydraulic Impact Study submitted

___Fencing shown

___Impact attenuators designed

XII. UTILITY ISSUES

First Submittal

___Utility conflicts identified (early coordination is required – send a copy of 1st submittal to all utilities, with a copy of cover letter to be placed in the file)

Second Submittal

___All conflicting utilities have been studied and resolutions documented

___Affected utilities are notified

___Plans sent to Utilities with a copy of cover letter to be placed in the file

Draft PS&E

___Plans sent to Utilities with a copy of cover letter to be placed in the file

PS&E Submittal

___Plans sent to Utilities with a copy of cover letter to be placed in the file

XIII. MISCELLANEOUS

A. Environmental
Check to see if Environmental impact statement or Environmental assessment is needed

First Submittal

___Endangered Species identified
___Endangered Plants identified
___Borrow pit – exposed groundwater?
___Hazardous Waste materials identified
___Historical Sites / Structures / Section 4f areas identified
___Coordinate with State Historical Preservation Organization and with City Historian
___Air Quality Study completed (required for ADT > 100,000 in design year)
___Noise Study completed
___Verify plans include known environmental commitments
___Coordinate final plans with "Project Permit Checklist"
___Miscellaneous removal items included:
  _____Houses, Garages, Sheds
  _____Septic Tanks
  _____Pumps / pump islands
  _____Gas tanks
  _____Well abandonment
  _____Asbestos
___Wetlands identified
___Groundwater contamination requirements checked and met
___Contaminated soil requirements checked and met